

MS1253

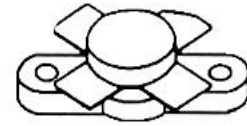
RF & MICROWAVE TRANSISTORS HF/VHF APPLICATIONS

Features

- 50 MHz
- 12.5 VOLTS
- $P_{OUT} = 70$ WATTS
- $G_p = 10$ dB MINIMUM
- COMMON EMITTER CONFIGURATION

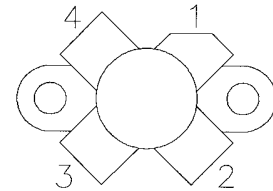
DESCRIPTION:

The MS1253 is a 12.5 V Class C epitaxial silicon NPN transistor designed primarily for land mobile transmitter applications. This device utilizes emitter ballasting, is extremely stable and capable of withstanding high VSWR under operating conditions.



.380 4LFL (M113)
epoxy sealed

PIN CONNECTION



1. Collector 3. Base
2. Emitter 4. Emitter

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

| Symbol | Parameter | Value | Unit |
|------------|---------------------------|-------------|------|
| V_{CBO} | Collector-Base Voltage | 45 | V |
| V_{CEO} | Collector-Emitter Voltage | 18 | V |
| V_{EBO} | Emitter-Base Voltage | 3.5 | V |
| P_{DISS} | Power Dissipation | 183 | W |
| I_C | Device Current | 12.0 | A |
| T_J | Junction Temperature | 200 | °C |
| T_{STG} | Storage Temperature | -65 to +150 | °C |

Thermal Data

| | | | |
|---------------|----------------------------------|------|------|
| $R_{TH(J-C)}$ | Thermal Resistance Junction-case | 1.05 | °C/W |
|---------------|----------------------------------|------|------|

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

| Symbol | Test Conditions | | Value | | | Unit |
|-------------------|-------------------------|-----------------------|-------|------|------|------|
| | | | Min. | Typ. | Max. | |
| BV _{cbo} | I _C = 50 mA | I _E = 0 mA | 45 | --- | --- | V |
| BV _{ces} | I _C = 100 mA | V _{BE} = 0 V | 40 | --- | --- | V |
| BV _{ebo} | I _E = 10 mA | I _E = 0 mA | 3.5 | --- | --- | V |
| BV _{ceo} | I _E = 50 mA | I _B = 0 mA | 18 | --- | --- | V |
| I _{ces} | V _{CE} = 15 V | I _E = 0 mA | --- | --- | 10 | mA |
| H _{FE} | V _{CE} = 5 V | I _C = 5 A | 10 | --- | 200 | --- |

DYNAMIC

| Symbol | Test Conditions | | | Value | | | Unit |
|------------------|-----------------|--------------------------|-------------------------|-------|------|------|------|
| | | | | Min. | Typ. | Max. | |
| P _{OUT} | f = 50 MHz | P _{IN} = 7W | V _{CE} = 12.5V | 70 | --- | --- | W |
| G _{PE} | f = 50 MHz | P _{IN} = 7W | V _{CE} = 12.5V | 10 | --- | --- | dB |
| η _C | f = 50 MHz | P _{IN} = 7W | V _{CE} = 12.5V | 45 | --- | --- | % |
| C _{OB} | f = 1 MHz | V _{CB} = 12.5 V | | --- | --- | 300 | pf |

IMPEDANCE DATA

| FREQ | Z _{IN} (Ω) | Z _{CL} (Ω) |
|--------|---------------------|---------------------|
| 50 MHz | 0.8 + j0.9 | 1.2 + j0.6 |

P_{OUT} = 70W
V_{CE} = 12.5V

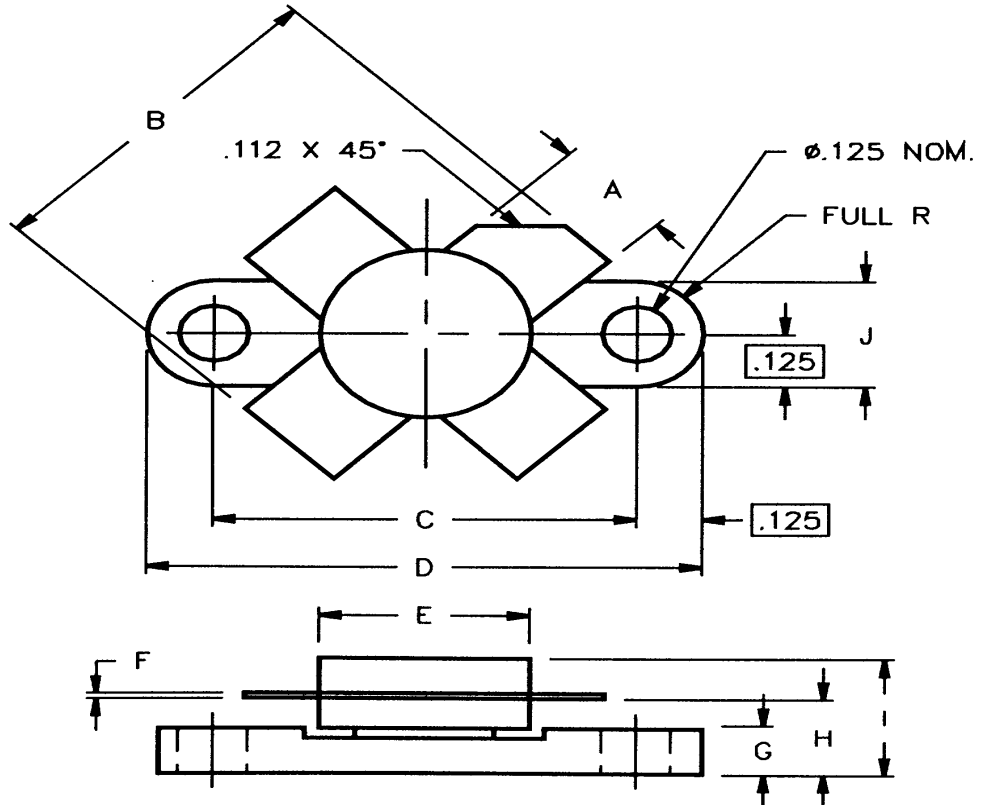


140 COMMERCE DRIVE
MONTGOMERYVILLE, PA
18936-1013
PHONE: (215) 631-9840
FAX: (215) 631-9855

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PACKAGE MECHANICAL DATA



| | MINIMUM INCHES/MM | MAXIMUM INCHES/MM | | MINIMUM INCHES/MM | MAXIMUM INCHES/MM |
|---|----------------------|----------------------|---|----------------------|----------------------|
| A | .220/5,59 | .230/5,84 | I | | .260/7,11 |
| B | .785/19,94 | | J | .240/6,10 | .255/6,48 |
| C | .720/18,29 | .730/18,54 | | | |
| D | .970/24,64 | .980/24,89 | | | |
| E | | .385/9,78 | | | |
| F | .004/0,10 | .006/0,15 | | | |
| G | .085/2,16 | .105/2,67 | | | |
| H | .160/4,06 | .180/4,57 | | | |